I saw but one case of repetition; after going about three or four weeks, this person recovered.

I remember twelve very severe cases, of which only three recovered; all dying in the paroxysm to which I was first called. I do not recollect one case in which the patient died, where I had a chance of treating the interval. No example of a paroxysm of a dangerous character, and but few of any character, after reaching complete reaction, and the already described treatment being used.

PECULIAR CASES. *Mrs. W.* had two attacks in one season, in the first attack, she was for forty hours in a cold, clammy sweat, skin not shrivelled; her pulse never became thready; no bloody discharges; excessive vomiting. In the second, copious intestinal hemorrhage; yielded to treatment; recovered.

Mr. Walker, ætat. 23. First paroxysm very slight; out on his farm next day; in forty-eight hours the second paroxysm; in this there was the cold skin, violent delirium, pulse not depressed; in forty-eight hours again, another paroxysm, cold surface, watery diarrhœa, excessive vomiting, sunken pulse, great tympanitis; and finally, enormous discharges of flatus; ended favourably by reaction, and a recurrence was prevented by quinine.

ART. III.—*Practical Observations on Continued Fever, as it prevailed in Middle Southern Virginia during the thirteen years from* 1816 *to* 1829, *inclusive.* By JOHN P. METTAUER, M. D., of Virginia.

CONTINUED Fever is the occasional product of nearly every climate, but more frequently occurs in cold and temperate regions; it is unquestionably of malarial origin, and appears both as endemic, and endemico-epidemic.

Three varieties of this fever have prevailed at different times, in the region of country, from which the facts and observations embodied in this paper are derived; that is, the Synocha, the Typhoid, and the Typhus.

Synocha, which was only the more open and well developed form of the disease, prevailed during dry and warm, and warm and damp seasons, and always as an endemico-epidemic of considerable extent. From 1816 to 1821, both years included, and especially during the warm months of those years, this was the predominant form under which continued fever appeared; and it was uniformly distinguished by the open characters of a well-marked inflammatory fever in a large majority of cases, throughout its more acute stage. During these years, too, all classes and conditions of society were equally affected by the disease, and, with few exceptions, it did not part with its peculiar open characters until the setting in of cold weather. Many cases of ordinary continued fever, or as it is often termed typhoid fever, and typhus, also occurred during this period, though their number was small until after winter set in. From 1822 to 1829, the typhoid and typhus varieties were the predominant fevers, but there were also many cases of the synocha type to be met with, both during the warm and cold seasons of this period; and these fevers were almost exclusively confined to certain districts and neighbourhoods, favourable to the generation of a peculiar miasm, such as is believed to be formed during the slow decomposition of ligneous substances.

Typhus did not generally make its appearance until many cases of the typhoid affection had previously occurred in a family; but when it did take place it was invariably distinguished by early cerebral disturbance, especially depression of the nervous energies.

The face of the country and climate of the region in which this fever prevailed, presented nothing calculated to lead to the belief that it was necessarily obnoxious to the disease. The lands are more or less broken and undulating; they abound in numerous small water-courses, and creek-flats which readily overflow; and many of the small streams dry up during protracted droughts.

The climate is not more variable than is usual in middle Virginia. With the exception of two of the years embraced in this history, there was nothing very remarkable or peculiar in the seasons favouring the production of continued fever. 1816 was distinguished by an unusually dry and cool summer. From May until October there was not rain enough to wet the earth an inch, consequently nearly all of the water-courses large and small dried up. There were many instances of wells and springs failing entirely during this year, which had never been known to be materially affected by droughts before. And the summer of this extraordinary season was so cool as to be attended with frost every month.

This was a year of fever, and the disease assumed the synocha form, distinguished by well developed and highly inflammatory characters; and it prevailed most extensively, especially during the warm months. Towards the close of September the cases of typhoid fever, which until then had not been numerous, multiplied rapidly, and soon became decidedly the predominant form, and maintained the ascendency during the succeeding winter. In 1827 another exceedingly dry summer occurred: this year was also distinguished by the almost universal prevalence of the synocha form of continued fever, though, there were occasional cases of the typhoid and typhus varieties, likewise to be met with. The summer of this year was very nearly as dry as that of 1816, but it was exceedingly warm. As autumn approached typhoid cases increased in number, and soon became the predominant fevers. But after winter set in, which was damp and remarkably mild, genuine typhus rapidly increased, and continued to do so the remainder of the season, and throughout the next year.

The years not particularized in the foregoing sketch, were not distinguished by any thing remarkable in a meteorological view, but they were years of fever; and the disease appeared chiefly under the typhoid and typhus forms, nearly in an equal proportion, though cases of synocha were often met with likewise. 1816 and 1827 were decidedly the sickly years of the period embraced in this paper; and, as already remarked, the synocha was the predominant form under which the disease appeared. In many instances the fevers of these years could be satisfactorily traced to malarial sources, especially at the commencement of the sickly season. But a vast number afterwards were as clearly referable to idiomiasma, or something like contagion, particularly as cases of fever multiplied in families, and as cold weather approached, or as the rigors of winter increased. Numerous cases occurred after the cold weather of the winter season set in, with individuals residing in uninfected neighbourhoods, who had assisted in nursing sick relatives; and such persons often communicated the disease to their families and neighbours who had assisted in nursing them. The propagation of every form of this fever by something like contagion was established by indubitable evidence in many instances; but it was not very communicable until it had continued in a family some time, more especially, the synocha and typhoid varieties. The difference in the communicability of these forms and typhus was, that many cases of the former, or one of long continuance became necessary to their propagation by the contagious agency; while a solitary example of the latter in many instances was sufficient to communicate it. In a few instances we were induced to believe that fomites propagated these fevers, as washerwomen residing in neighbourhoods remote from the seats of the disease, who had received and washed the clothes of the sick, and who were exposed in no other manner, had regular attacks of them.

Night exposure in sick rooms was the most favourable for the propagation of continued fever from the sick to the well. Comparatively few persons contracted either form, who only remained a short time during the day in sick rooms.

High and elevated situations in the vicinity of low grounds and water-courses, were the earliest seats of these fevers, unless when they occurred in or near log cabins in a state of decay; while table and flat lands immediately bordering on water-courses enjoyed nearly entire exemption from them, until the disease was conveyed to such situations by infected persons who had contracted it elsewhere.

Most of the cases seen and treated by us could be very satisfactorily traced to miasmatic causes; and during the period embraced in this brief history, the disease prevailed as an epidemic more or less extensive in its range.

The miasmatic sources from which these fevers originated were somewhat diversified. During the dry summers of 1816 and 1827, there was very little reason to doubt that the action of the sun's rays upon the beds of the water-courses, or their muddy margins, which had been exposed by the drying up of the waters, originated most of the fevers of those years. There were other sources of miasmata during those years, which doubtless contributed in some degree, likewise, to the production of fevers, especially such as were created by cutting down and clearing up wet flat lands; as well as by draining marsh-like bottoms. The excessive and alarmingly dry summer of 1816, induced the farmers of this section of Virginia, to rely almost exclusively on their flat lands, especially for the culture of Indian-corn (maize), and tobacco (nicotiana), after that memorable year. After this year a general effort was made by our agriculturists to bring their low lands under tillage, which they accomplished by cutting down their timber, and by every species of ditching and draining. This system very soon exposed numerous moist surfaces to the action of the atmosphere and the solar heat, which had been for a long series of years accumulating vegetable deposits, but too moist to allow those chemical changes to take place in them necessary for the formation of miasmata until now. Many small water-courses, too, were straightened by ditching them, which left numerous stagnant ponds of water along the old beds of the streams, as well as exposed the muddy bottoms to the action of the sun. Many of the ditches formed during this period, exposed woody substances to the action of the sun and air, that must have been buried under ground for a vast number of years. During this period, too, extensive tracts of land were cut down, and the timber suffered to remain on them, until the leaves and small branches were nearly or completely rotten. The summers during this period, doubtless, contributed by their warmth, and the dry weather so apt to occur at such seasons, to augment the tendencies and activity of these several miasmatic causes, in rendering fevers more prevalent. From 1816 to 1829 inclusive, there was abundant reason for believing that the agricultural changes which have been hinted at, tended greatly if not chiefly to the production of fever, with the exception of 1816 and 1827. 1829, the last year embraced in our history, presented fewer cases than either of the preceding: indeed the epidemic of this year terminated in August, and abruptly; and very probably a period was put to it by the frequent and excessive rains from this time till frost. Since 1829 there has been no year of the general prevalence of fever in this region, and we think, chiefly, because nearly all the principal and most prolific sources of miasmata have been broken up, by the modes of cultivating flat lands generally adopted subsequent to that time. It is true, cases of fever have occurred since 1829 and down to the present period; but they were confined to particular families, or filthy small villages, and proceeded from malarial causes entirely local and limited in their operation. In some instances the disease was evidently communicated from such situations by contagion to other neighbourhoods from which, in turn, it was again propagated to others. After many years careful investigation of the origin of our continued fevers, we are fully convinced that they were, in a large majority of cases, produced by miasmata, especially in the commencement, when they appeared as an epidemic. But we are equally well satisfied that they were in many instances induced by idio-malaria or contagion—and it is in this manner that these fevers extend through families during the cold seasons.

No age was exempted from continued fever; infants at the breast, and individuals upwards of sixty years old, with every intermediate age, being affected. Being between the ages of eighteen and thirty years was that most obnoxious to this fever. The black population were most subject to typhus, and the depressing forms of the typhoid variety.

The disease was frequently superinduced by catarrhal affections, especially during variable seasons. Measles; hooping-cough; chicken-pox; worms; conception; parturition; excesses in eating and drinking: surgical accidents and operations; terror; passion; grief; despondency; intense study; long fasting; colic; fatigue; and some others, at different times, also, seemed to excite the disease, but as accidental or occasional causes.

The *anatomical characters* which were displayed during our post-mortem examinations* were lesions of the glands of Peyer; of the mesentery; spleen; mucous membrane of the small and large intestines; of the peritoneal coat of the small intestines and stomach; of the meninges of the brain, and especially of the arachnoid; effusion of serum, or blood and serum into the ventricles of the brain; congestion or softening of the lungs, and gangrene of the bladder. A dissolved state of the blood was also occasionally met with as a post obit appearance, especially in fatal cases of typhus: in such cases the lungs were more or less disorganized; and in every instance the membranes of the brain were greatly congested.

We were early enabled to distinguish three stages in the progress of this fever, when opportunities were afforded us of observing it from its commencement; that is, 1st. The forming stage, before the febrile category was established. This stage was distinguished by languor; lassitude; a general feeling of weakness; irregular, unsteady and variable pulse; sensations of coolness, chilliness, or of transitory increase of warmth termed "flashings of heat" in popular language; loss of appetite, or morbid increase of it; vertigo; often uneasiness of the head and eyes, or even pain; sluggishness of the mind as well as body; often drowsiness, somnolency, or absolute sleeplessness; reluctance for every kind of exertion; occasionally extreme depression, or vivacity; disturbance of most of the secretory exercises, and some others.

2d. The active or febrile stage. This stage was characterized by a regular series of morbid associations, progressively and gradually formed generally, though occasionally occurring abruptly as in synocha. It was attended with, or ushered in by a chill or chilliness at a particular period of the day, succeeded by a hot stage more or less perfectly formed, and steady in its duration for a limited time. The hot stage, which varied in different cases in the degrees of its intensity, was uniformly distinguished by an accelerated, and a more or less full and strong pulse; a hot and dry skin; the tongue coated, and white or yellow, and dry or moist: there was also more or less thirst, headache, pain of the neck, back, and extremities, the face was flushed; the temples throbbed; and the bowels were constipated, or preternaturally loose: there was loss of appetite; diminution of the urinary secretion, and now and then increased desire to evacuate it: the senses of sight and hearing were occasionally exceedingly sensitive: not unfrequently there was delirium, restlessness, or quietude bordering on a state of the most perfect resignation: occasionally almost universal soreness was experienced throughout the skin, though this sensation was more generally an attendant upon the preceding stage: nausea or vomiting; a peculiar cough; accelerated breathing, and some others, also generally occurred during this stage as attendant phenomena.

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* We treated more than four hundred cases from 1816 to 1829, and lost only twenty patients. Many of the cases were of the most unpromising description, perhaps a fifth.

3rd. The subacute stage. This stage was distinguished by most of the phenomena of the acute stage, but their general character was more or less subacute, with a decided tendency to depression of the energies, and vital operations of the economy: it presented a very great variety of phenomena connected with structural or organic change, as we supposed in greater or less degrees.

The forming stage continued from a few hours to several, nay, in some instances many days, and the phenomena by which it was distinguished, evidently indicated a versatile and unfixed irritation with which it was attended, implicating chiefly the functional operations. There was nothing like a febrile state manifested during this stage; nor could we distinguish any thing of a paroxysmal aggravation of the attendant phenomena at particular periods of the day, until it verged closely on the febrile stage.

The febrile stage was generally ushered in with a chill, or chilliness, or coldness, which was soon succeeded by the hot or reacting state, and the usual phenomena so constantly attendant upon this stage, constituting the febrile reaction. In many cases the febrile commotion of this stage acquired great intensity, and was attended with a highly excited state of the circulation; the pulse frequently ranging from 140 to 150, or even to 160 beats in a minute, and full, strong, and in many instances bounding. This state was invariably followed by an abatement of the more acute symptoms after a few hours; and something like a remission came on which occasionally was attended with sweating, and these phenomena, after the first paroxysm, occurred twice in the 24 hours, and continued to recur daily, until the febrile course was arrested by crisis. This stage seemed to be connected with a fixed or pathological irritation from its commencement, though in the early period of it, the irritation was somewhat unsteady, seeming to partake of fluxionary or congestive characters: but irritation soon became steady, and displayed the disease in its most perfectly formed condition.

After some days continuance, especially if it lasted more than a week, it gradually parted with its more open characters, and imperceptibly glided into, or was merged with the subacute stage, which, as already stated, was to be distinguished by the signs of exhaustion and depression of the constitutional energies in greater or less degrees.

In the acute as well as the subacute stage, the exacerbations commenced from 7 to 9 in the morning, were at their acme from 11 A. M. to 2 P. M.; and were in remission from 4 to 7 P. M.: this we termed the diurnal paroxysm. The nocturnal exacerbation commenced at or a littl after 7 P. M., was at its acme from 12 to 3 P. M., and was in remission from 6 to 7 or 8 A. M. The nocturnal paroxysm was generally the most violent throughout the disease, though frequently much the shortest; and if dilirium occurred at all it usually made its first appearance during this paroxysm: this symptom, too, was always more violent at this period when both paroxysms were attended with it. We regarded continued fever a neuro-inflammatory affection, differing from ordinary inflammatory fevers, by reason of its quotidian reduplications, the less intense, and depressing nature of the febrile phlogosis, and the fluxionary and paroxysmal character of it, as well as all other miasmatic diseases. Although inflammation often occurred in this fever, we have never regarded it to be a necessary constituent of the disease, but rather an accidental associate; hence it always comes on more or less remotely from the commencement of the attack. In the early stages of this fever, as it has appeared here, and been particularly observed by us, its pathology evidently indicated chiefly neuro-functional disturbances; and these characters of the irritation were rarely ever lost entirely even after phlogosis had set in. Always the product of malaria, and acting, in all probability, primarily upon the nerves connected with the secretory operations of the natural surfaces—more especially the mucous; and consisting of an unsteady and revulsive irritation, located chiefly in vital structures insusceptible of the highest degrees of inflammation, unless induced by irritants of a very different character, and in organs highly important to the well-being of the economy, it was to have been inferred that the febrile phlogosis would not acquire a very exalted intensity. In this view of the inflammatory character of the phlogosis of continued fever we are not singular, as several very distinguished pathologists have entertained and expressed opinions not very unlike it. Without pretending to explain the rationale of it, we will only now state the fact, that the fevers treated by us never exhibited the true sthenic, or hyperæmal inflammation, not even in the most acute cases.

Of the treatment: and first of the Forming Stage.—Before entering upon the treatment, we will briefly recapitulate the symptoms of this stage: they are languor, lassitude; a general feeling of weakness; irregular, unsteady and variable pulse, occasionally accelerated, or preternaturally slow; sensations of coolness or coldness, often succeeded by flashes of heat, and felt more particularly along the spine and scapulæ; loss of appetite, or morbid increase of it; vertigo; often uneasiness of the head and eyes, or pain; sluggishness of the body as well as of the mind; often difficulty in computing, or in measuring time; drowsiness, somnolency, or absolute sleeplessness; reluctance for every kind of motion or exertion; occasionally extreme depression, or hilarity; costiveness; disturbance of most of the secretory exercises, and some others. In numerous instances we succeeded in arresting the course of the disease at this early period by the decisive employment and energetic use of emetics. We commenced with them as early as possible, and repeated them once in twelve hours until there was a complete subsidence, or an abatement of the symptoms; or until they were contraindicated by the signs indicative of the near approach of the febrile stage. When practicable we invariably commenced with them early in the morning, or late of an evening. In some instances the emetic was repeated morning and evening four or five times, and with the effect of breaking up the disease entirely. Sweating generally followed emesis when it arrested the disease; and our constant aim was to co-operate with that tendency by the employment of suitable auxiliary measures. Full and free vomiting was required to produce the relaxation necessary for diaphoresis, and to enable us to effect it large dilution of the stomach with bland tepid fluids was invariably directed. A coated tongue and complete anorexia indicated in many instances the necessity for the use of emetics. Occasionally the tongue was clean, while there was loss of appetite at the same time, with more or less impairment of the secretions generally. In such cases we did not hesitate to employ emetics, but were careful not to use antimonials, lest they might superinduce too much irritation in the gastro-intestinal mucous membrane, and thus hasten a condition to which this important structure is so prone in this fever. Ipecacuanha was uniformly employed in such examples of the disease; while we used either that article or the tartar emetic in the cases attended with a coated tongue. During the operation of the emetic, and for some hours after, measures which promote sweating were carefully used. When the skin was cool, and its capillaries torpid and bloodless, we invariably employed some form of rubefaction during the action of the emetic or very soon after, with the design of co-operating with the revulsive effects of the emetic. Artificial heat, friction, sinapisms and such like means were generally directed to be used to the surface for that purpose. After the vomitive commotion was over we always allowed patients to indulge in repose, to which there is generally so strong an inclination after the free operation of an emetic.

When the bowels were constipated, or when the coating of the tongue was heavy, we generally united a few grains of calomel with the emetic, or, it was administered after the vomitive commotion had subsided. If the emetic was given in the morning without the mercurial, and that agent seemed necessary, we directed it to be taken at bedtime, in combination with one grain of ipecacuanha, made into a pill. Frequently, however, mercurials were not employed with, or after the emetic; and in such cases, we either used a pill containing one grain of ipecacuanha, three of aloes, and six of rhubarb; or, a mild purgative enema was administered.

In very many of the cases of fever treated by us, an early disposition to gastro-enteritis was manifested; and in all such cases, calomel could not be so safely employed. This fact was derived from the treatment of several very intractable cases which early came under our care, rendered so by the officious and too free use of calomel. In two of the cases, the mucous lining of the stomach and intestines was completely denuded of its epithelium, and the surface thus exposed, as well as the gums and nose bled till death closed the scene.

Diaphoretics of mild qualities were often employed in this stage likewise, and with distinguished benefit. In many instances we found the spirit. minder. and dulcified spirit of nitre united, and taken at bedtime, to be repeated once an hour, for two or three times during the night, a most valuable diaphoretic. Wine whey, and a few drops of aq. ammon. we also frequently used with advantage. The Dover's powder was likewise occasionally employed beneficially, and when patients could not sleep, it was especially useful. The teas of hops, sage, and even of corncobs were found eminently serviceable as diaphoretics in mild cases. Taken after bathing the feet in warm water, at bedtime, they rarely ever failed to induce sweating.

Bleeding in a few cases was required in this stage, both as a preparatory measure to the administration of emetics, and to give efficiency to the diaphoretic measures. When plethora obtained, or strongly marked cephalic aptitudes existed, and the patient was young and athletic, we invariably bled before giving an emetic. Rest, quietude, demulcent mild drinks; and a simple non-stimulating diet, consisting chiefly of liquids, were generally directed by us throughout this stage. We uniformly required patients to remain in bed as long as the disposition to sweat continued, which occasionally was the case for several days after every symptom of the disease had disappeared.

The convalescence required from one to two weeks, and during this period, we deemed it all important to keep the bowels soluble by the use of proper remedies.

The plan which has been premised, did not always arrest the course of the disease in this stage, though in many instances, it seemed at once to put a stop to it, and to produce speedy and complete recoveries. When emetics failed to arrest the disease in its forming stage, they rarely ever seemed to aggravate the fever in its succeeding stages, but on the contrary, if judiciously employed impressed upon it milder characters, and rendered the after treatment more easy, and the result correspondingly fortunate.

The Acute or Febrile Stage. As in the forming stage, we will briefly recapitulate the symptoms of the acute, before considering its treatment:—they are an initiatory chill, or chilliness at a particular period of the day, succeeded by a hot stage, more or less perfectly formed, and steady in its duration for a limited time. The hot stage, which, as already stated, varied in different cases in the degrees of its intensity, was uniformly distinguished by an accelerated, and more or less full and strong pulse; a hot and dry skin; headache, frequently pain of the nape of the neck, back and limbs; thirst; tongue coated, yellow or white, and dry or moist; flushed face; temples throbbing; occasionally, sick stomach, and vomiting; constipation, or looseness of the bowels; loss of appetite; not unfrequently delirium; the senses of sight and hearing occasionally exceedingly sensitive; diminution of the urinary secretion, and now and then increased desire to void it; restlessness; a peculiar cough; accelerated breathing; sighing: drowsiness, or watchfulness, and some others; and these constituted the symptomatology of the early or more acute period of the febrile stage.

In treating this stage, every paroxysm afforded us an opportunity of combating the initiatory cold or cool state; and the ordinary means of restoring and equalizing the temperature, such as the application of artificial heat to the surface of the body, sinapisms to the extremities, friction, and mild internal stimuli were the measures generally resorted to. The cool state, however, was not always well marked, and generally it soon terminated in the reacting or febrile state of the paroxysm. The acute stage in its early beginning required in a large majority of cases blood-letting, more or less freely used. In the synocha variety of the disease especially, it was impossible to control and reduce the pulse by any other means. Even in the typhoid form we found in nearly every case that bleeding was required to reduce the febrile excitement. With young and vigorous subjects, we always used this remedy decisively, more especially in synocha, as it was of the first importance to subdue the pulse at once. In some cases we bled two and three times during the earliest paroxysms, and largely at each time, before the pulse yielded. The blood was generally drawn from a free orifice, and when practicable the operation was always performed while the patient was sitting erect in a chair, or in bed, which enabled us to produce in many instances a very decided impression upon the pulse, with the loss of comparatively a small quantity of blood. When cephalic congestion was feared, we felt emboldened in the use of the lancet, and occasionally opened one or both of the external jugulars, or the temporal artery after free bleeding from the arm. With constitutions naturally feeble, or with persons advanced in years, one decisive bleeding well timed during the rapid increase of the paroxysm, often controlled the pulse. We never ventured to bleed such persons repeatedly, and freely at each time, even if the lancet was indicated, as collapse of dangerous character had resulted in several similar cases, from the officious and indiscreet bleedings of nurses. In all such cases the lancet was used with caution, taking care to moderate the pulse rather than reduce its force decidedly by the bleeding. We were much surprised to find with such constitutions, occasionally, that though the febrile action was of very intense character, one free bleeding would produce decided swooning; but after a few moments the reaction would become as active and violent as before the bleeding. Our later observations have led us to regard the febrile commotion in such cases, as the result of congestive irritation, or congestions with very little inflammation; and we suppose the sudden detraction of blood disperses the congestions so abruptly as to suspend for a few moments, or during the continuance of the swoon, the febrile irritation of the congested organs, without correcting or removing the febrile susceptibility. During the epidemic synocha of 1827, a large proportion of the cases demanded very free and repeated bleedings; but the remedy was frequently improperly used, producing in some instances sudden transformations of the fever into adynamic, and occasionally into the ataxic types. Of the latter description we met with a most perplexing variety, distinguished by an exceedingly active and rapid pulse, and possessing at the same time an expansiveness and volume assimilating it to a synocha pulse, or perhaps more properly to the hæmorrhagic pulse. This state was evidently produced by the improper use of bleeding, especially in the abstraction of blood beyond what was required to subdue the febrile phlogosis. In every case the further use of the lancet seemed indicated by the tumult and activity of the circulation, but bleeding only served to continue the morbid state. We witnessed many cases of the kind in consultation, but no case occurred in our own practice. Marshall Hall has well described this affection. We treated such cases with a combination of ipecacuanha, acet. plumb., aloes and gum camphor. A pill containing one grain of ipecacuanha, one of acet. plumb., half a grain of gum. camph. and half a grain of aloes, administered once in three or four hours, generally quieted the circulation, and often produced crisis by diaphoresis.

Our object in bleeding in this stage was not so much to cut short, or to cure the fever, as to guard the organs implicated, or about to become so, against inflammation and its consequences; and to place the system as speedily as possible in a condition favourable for resuming the secretory exercises, influenced by proper internal remedial measures; and it was never found safe to dispense with it, or to regard the febrile action as decidedly impressed and corrected by it, until the pulse was bled down and softened. Our rule was the pulse, and we have never regretted that it was early adopted as our "regula regularis" in treating this fever.

Refrigerants were generally employed in connection, or in alternation with the lancet, especially when the exacerbation was attended with a hot skin and tormenting thirst. We used cold drinks and pounded ice as internal refrigerants; and sponging the surface of the body more or less extensively with cold or iced water, or vinegar and water; and these measures were continued throughout the exacerbation, or until the morbid heat abated, taking care not to urge their depressing influence so far as to endanger the system from collapse. In some instances the pounded ice relieved the internal heat and sick stomach almost as soon as swallowed; and it never failed to afford great comfort to patients suffering from a burning fever and tormenting thirst. Occasionally, too, we have seen complete crisis by perspiration follow its use on the fifth and seventh days of the disease.

Purgatives were indispensable remedies in this stage, likewise, and we invariably employed them as soon as one or two decisive bleedings had been premised. If torpor of the bowels had existed for some days, we generally directed a purgative enema, especially if the case was seen after morning. When, however, they had only reposed for a short time, and no localizing tendency of the disease manifested itself, we preferred to employ internal cathartics. Even after free alvine evacuations from the use of enemata during the day, we generally employed internal purgatives; and our mode of using them was to give from two to seven grains of calomel, with one of ipecacuanha at ordinary bedtime, to be succeeded the following morning by some brisk cathartic. In a large majority of cases we decidedly preferred the oil as a carthartic, and generally found it to succeed very well. Occasionally, however, it proved highly irritating and offensive to the stomach and bowels, by reason of an acrimony acquired by it in those organs. Sometimes it became so very acrid after remaining in the stomach only a short time, as to provoke vomiting, attended with intense gastric heat, and scalding of the fauces, which uniformly aggravated the febrile symptoms. The bowels, too, suffered from tormina, and in several instances a state came on resembling cholera morbus. These unpleasant effects from the oil occurred exclusively in the cases distinguished by great heat. In such examples, after many trials, we finally employed calomel followed by some of the compound saline purgatives, especially sulph. magnes. in combination with magnes. ust., or rhubarb. When a diarrhœal condition of the bowels existed—a state by no means unusual—we employed the rhubarb alone in doses varying from 12 to 30 grains, more particularly if the oil was offensive, or objected to. In every case, with the design of quickening the action of purgatives, we advised patients to lie partly on the right side for one or two hours after the administration of the remedy, so as to favour its passage into the duodenum. This simple expedient has greatly assisted us in inducing prompt purgation, especially when the stomach was irritable, and the reason will at once appear obvious to even the most careless professional observer.

Purging in this stage, was chiefly designed to unload the bowels of ingesta, and thus to remove irritation from their presence in the alimentary tube. It also had the effect in some degree, to emulge the secerning organs opening into, and existing along the intestinal cavity, especially the liver, and the muciparous glands. Not expecting to accomplish any positive curative ends by purging in this stage, we only resorted to it when the bowels became constipated, and when that state seemed likely to irritate the fever. In many cases we relied on purgative enemata of mild qualities, administered during the paroxysm, merely to produce a very partial effect upon the bowels, and with evident febrifuge results. This mode of eliciting the action of the bowels in continued fever, cannot be too strongly insisted upon; after one decided purging in some cases, we have been enabled to make it supersede the use of internal purgatives, which sometimes are hazardous, by their tendency to produce or to hasten gastro-enteritis, and are always more or less offensive to patients. Even when there are decided cephalic tendencies, enemata may be safely and beneficially trusted as cathartic means in this stage: and as long as they elicited free dejections, we regarded them as effective in arousing the peristaltic movements of the bowels, and in emulging the liver and muciparous secernents. In some instances they seemed to act more decidedly as means of revulsion in the cephalic affections of this stage than internal cathartics.

When purging was to be effected by internal remedies in a decided manner, we uniformly administered the cathartic early of a morning. At this time the bowels respond more readily and perfectly to the action of cathartics; and patients are more apt to sleep the night after, as sufficient time is allowed for the commotion from the operation of the medicine to subside before the hour for sleep arrives. It may not be out of place to state here, that we often succeeded in inducing sleep in this stage, by having a mild enema administered towards early bedtime.

Anti-emetics were occasionally required to compose the stomach, and to relieve nausea, or vomiting, which not unfrequently occurred in this stage. Generally we found the pounded ice to succeed in relieving the sick stomach, especially when it was attended with internal sensations of heat. In some cases, however, it failed, and with such we employed at different times effervescing draughts, especially the soda water, dulcified spirit of nitre, diluted acids, fresh fruits, and absorbents. As an absorbent in such cases, we often used a teaspoonful of levigated carbon recently prepared, mixed in a wineglass of fresh water, taken once an hour, and with the happiest effects.

The drinks employed by us, were generally cold and freely allowed, if desired by the sick, especially during the exacerbations of fever; and nothing generally, seemed to answer better than simple cold water, or cold slippery elm tea. Lemonade, peach, apple, and tamarind water, currant jelly diffused in water, and such like articles, were at different times employed as drinks by us in this stage.

The diet was required uniformly, to consist of light, liquid preparations. Farinaceous substances were generally preferred. Rice-gruel, panada water, buttermilk, coagulated milk, occasionally new milk and water, baked apples, and such other articles as possessed mild unirritating qualities, with very few exceptions, constituted the diet of this stage. Even these light articles were only allowed in small quantities, and after long intervals. We generally inhibited the use of food during the exacerbations of this stage. A cool, well ventilated, clean, and quiet apartment was invariably, if practicable, provided for the sick, and with as few nurses as could perform the necessary duties.

The plan which has been briefly presented, furnishes a fair outline of our mode of treating the acute stage of the synocha, and typhoid varieties of continued fever; and it may be regarded, too, somewhat as the plan adopted by us in treating the febrile stage of typhus, when distinguished by very acute symptoms, as was often the case. Many variations, however, were required, especially in the employment of the lancet, and purgatives. With some patients a single moderate bleeding was sufficient to reduce and control the pulse permanently. With many others it became necessary to bleed freely in every paroxysm until, and in some instances, beyond the ninth and tenth days; while with others again, after the first or second exacerbation, the lancet was only required occasionally during the nocturnal paroxysms.

Purgatives, too, required to be varied much. In some cases they were needed daily during this stage, as well as throughout the entire course of the disease. Others only demanded them once or twice in the commencement of the disease. While others again, only required them on the critical days.

Regarding continued fever as periodic, after the establishment of the morbid category, and believing that it would pursue its course to a regular termination by crisis, under any plan of treatment, our chief aim in treating it in this stage was, to conduct it safely for the economy, and favourably for a salutary crisis, to the subacute stage in which that important change always takes place, the treatment of which shall next claim our attention.

The Subacute Stage. In this stage, the common symptoms differed from those of the acute chiefly in their intensity, which in some instances was very striking. New symptoms, too, generally occurred, to distinguish it from the preceding stage, and they were always regarded as peculiar to it, among which may be enumerated a peculiar rose-coloured eruption, confined chiefly to the abdomen and chest, composed of a few red, papular elevations, or pimples, which disappear upon pressure, but immediatly reappeared after the pressure was removed, and it recurred after the sixth day of the disease. Sudamina, also, frequently made their appearance in this stage, but at a more remote period: they recurred after the twelfth day on the trunk, neck, axillæ, clavicles, epigastrium, limbs, and groins; and consisted of numerous minute vesicles filled with a colourless fluid. Epistaxis; hemorrhage from the bowels, bladder, gums, and uterus; and a peculiar suffused appearance of the eyes; tinnitus, or buzzing of the ears; great impairment of the memory, and of the faculty of attention; somnolency after being roused; slow and hesitating utterance; extreme unwillingness, and inability to exert the body or mind; deafness, and delirium, were pretty uniform attendants upon this stage also.

As the disease advanced the tongue became decidedly drier and darker, and not unfrequently it was swollen, glossy, parched, cracked and bleeding; raw and bleeding—or, incrusted deeply with a flaky sordes—rough and dry, its motions tremulous—was protruded with difficulty, and withdrawn slowly. The teeth and lips were generally invested with sordes; the abdomen was more or less tumid and tympanitic; often the spleen was perceptibly enlarged;

there was cough, with sonorous râle; the countenance was more suffused, red, or purplish, sometimes swollen; the expression was sunken and vacant, or wild; the pulse greatly accelerated and more or less tense; skin pungently hot during the exacerbations of fever; respiration hurried, or preternaturally slow; there was subsultus tendinum, and spasms of the lips—of the muscles of the jaws—of the eyelids; rigidity of the muscles of the neck, limbs, and abdomen; the attitude was supine; there was a tendency to slide downwards in bed; there was sloughing of the skin and soft parts about the sacrum, trochanters, and of blisters; and in a few cases there was inflammation and suppuration of the parotids, and axillary and inguinal glands; and one instance of necrosis of the superior maxillary bone. Hiccough; involuntary discharges of fæces and urine; fetid breath; discharges of pus, or pus-like matter from the bowels and bladder; suppression of urine; paralysis of the bladder and retention of urine; paralysis of the limbs; and an exceedingly rapid, small and feeble pulse, were very often met with, also, in the more advanced stages of the disease. So much for the symptomatology.

The *treatment* of this stage in many cases did not differ very widely from that pursued in some examples of the acute. In numerous instances bloodletting was demanded. We often bled in the nocturnal paroxysms, which were uniformly the most violent; and in many cases, bleeding was required in the diurnal exacerbations likewise. In the synocha form, especially, we found bleeding necessary; and in some instances as late as the 18th and 20th, and even the 25th days of the fever. Our aim was to maintain as moderate and equable state of the febrile reaction during this stage as possible, not only as the best means of preventing any serious injury to the organs generally involved in the local affection, but as the most favourable condition for restoring the secretory exercises, from which the healthful operations were to follow. We bled during the exacerbation whenever the pulse was too active and strong, even until crisis occurred; but our bleedings were moderate, as they were only intended to enfeeble the organs of circulation for the time being: very often only one or two ounces of blood were required to impress the pulse. In many instances topical bleeding by leeching, or wet-cupping was found of very great benefit, especially when employed to the regions of the local affections. The abdominal walls often demanded leeching in this stage, to combat the enteritic irritation so constantly present. It was rarely practicable to cup the abdomen in such cases, in consequence of the extreme tenderness of the soft walls, especially. The pectoral walls were also often depleted by leeching and humid cupping, in thoracic affections of this fever, as well as the temples in the cephalic.

Refrigerants were generally found highly beneficial in this stage. In some cases they succeeded much better in moderating, and in controlling the febrile reaction than the lancet. We employed pounded ice, or iced, or simple cold water as internal means of refrigeration; and had the surface freely sponged with cold or iced water, or vinegar and water, especially the temples, neck, forehead, extremities, and abdomen, repeatedly, and after short intervals, as the external; and they were continued until the morbid heat of the surface and pulse were reduced for the present paroxysm. In many instances we directed patients to sponge, and drink freely of iced or simple cold water immediately after v. s., and with the effect of producing diaphoresis. In the cephalic affections, and especially when delirium was present, the internal use of ice or cold water, was always freely allowed. We employed them also to the scalp, either by investing the head with a bladder partially filled with pounded ice, or, by pouring the iced water upon it until a decided impression was made. This plan enabled us in many instances of violent delirium to quiet our patients in a few moments. In milder examples we only employed cloths to the head saturated with the cold liquid.

At every period of this stage refrigerants were employed and with great benefit, and we always advised them when the skin was hot and dry during the exacerbations. Great care, however, was required in their employment, in so graduating their effects as not to depress the enfeebled powers of the economy too decidedly, or to endanger them from overpowering collapse. *Moderate reaction was always allowed to follow the use of refrigerants;* and to secure this result the spongings were used after longer intervals, and with decreasing force, as the paroxysm declined. We were very careful to caution nurses not to sponge while the skin was cool, or only moderately warm, and when perspiring. Purgatives, too, were demanded in the subacute stage, but never to a very bold extent. In a large majority of the cases, we employed oil as an internal purgative. We likewise resorted very often to the use of mild purgative enemata. In this stage, it was of the first importance, *to unite remedies with cathartics, which tended by their peculiar therapeutic powers to extend the range of purgative influence throughout the economy.* For this purpose we often associated with, or premised the exhibition of our cathartics with minute portions of ipecacuanha, or tartar emetic. One grain of ipecacuanha united with three or four of calomel made into pill with a few drops of water, and given at ordinary bedtime, to be followed next morning by an active purgative dose of oil, or any other cathartic applicable to the case, or even an enema, constituted the course generally pursued by us in this stage. *There was much advantage in the administration of the ipecacuanha and calomel the night before the active purgative was given.* Thus united they often operated as a diaphoretic compound, and never failed to render the action of the purgative dose which succeeded next day much more effective. In many instances we found the tongue moist and secreting the day after the exhibition of that compound, when it had been previously, and immediately down to the time of giving it, dry. It was not always safe, however, to employ calomel in this stage, as *it occasionally proved exceedingly irritating to the bowels, even when given in minute doses.* A polished, or raw condition of the tongue, attended with irritable and loose bowels, generally contra-indicated the use of calomel. In such examples we employed the blue mercurial powder, when a mercurial was deemed necessary, or the blue mass. Occasionally when we were unwilling to use any form of mercurial, two or three grains of aloes, or of aloes and rhubarb, united with one grain of ipecacuanha, were employed, and generally answered a good purpose. Aloes thus combined is not only a safe, but efficacious remedy in such modifications of continued fever, and its great efficiency and safety in these cases, after numerous and satisfactory trials many years since, induced us to make trial of it in dysentery, and the result was most satisfactory. It was never safe to employ saline cathartics in this stage. Their tendency to elicit very thin or watery evacuations, and to prostrate the energies of the secretory organs, without ameliorating their condition, as reducing the febrile phlogosis, rendered them objectionable in our practice, in this stage of fever, almost from the commencement of our professional career. In a few cases, only, were we willing to employ the calcined magnesia, and chiefly, because it frequently produced liquid or watery stools. Oil, the rhubarb in powder or syrup, calomel, the blue powder or mass, aloes, and enemata were the purgatives employed by us almost exclusively in this stage.

Diaphoretics were allowable and necessary in this stage very nearly from its commencement, and we employed many of the established agents of this class as internal remedies. In the commencement of this stage diaphoretic measures were only employed as auxiliaries to purging, though, as they occasionally produced their peculiar sweating effects, we now and then ventured upon their use as diaphoretics, especially, when early abatement of the febrile symptoms took place. Our chief reliance was on minute doses of ipecacuanha, or tartar emetic when internal medication was designed; and these articles were only administered on the nights of crisis. In a very large proportion of the cases treated by us, the ipecacuanha in the form of a pill was the diaphoretic used; and we never administered more than one grain at a time, and the doses rarely ever exceeded three, and after intervals of three hours; more frequently only two were given during the night. In the early periods of this stage, as already intimated, we often united calomel with the diaphoretic; and even at a later period we occasionally employed such a compound. Generally, our design was to make an impression nearly simultaneously on the gastro-enteritic mucous membrane and the liver, as well as on the skin; and the compound ipecacuanha pill already described, rarely failed when judiciously timed, to accomplish those ends. When tartar emetic was used as a diaphoretic in this stage, its watery solution, or the antimonial wine were the forms for exhibition invariably preferred by us, and the doses never exceeded the fourth of a grain. From one-seventh to one-fourth of a grain constituted the extreme doses with adults. This article was only applicable to, and safe in cases of pure synocha, or when the tongue was heavily coated: we occasionally employed it, too, in the thoracic and cephalic varieties, but never when the tongue was polished, or denuded and raw. Like the ipecacuanha, it was only employed on the nights of crisis, and never more than three doses administered during the night.

In certain cases we derived benefit from the use of the dulcified spirit of nitre in doses of from 25 to 30 drops once an hour, administered in some mucilaginous or diuretic vehicle. This remedy was particularly serviceable when the tongue was dry and the thirst urgent; it afforded great comfort as a refreshing beverage, and was often followed by a marked improvement in the condition of the tongue after only a few doses. We often employed the nitre as a mouth-wash in such cases, and no remedy as yet tried by us has so uniformly tended to restore moisture, and to improve the condition of the tongue: a teaspoonful of the nitre mixed in an ounce of water is the form in which we employ it as a gargle. The aërated waters were likewise often used as diaphoretics, and generally with advantage; they were objectionable, however, in some cases, especially when a tendency to gastro-enteritic irritation was present. In several instances in which we used these drinks, violent and sudden pain in the stomach instantly followed their entrance into that organ, produced no doubt by the instantaneous expansion of the tender and inflamed walls by the carbonic acid gas. These drinks are generally very grateful to patients; and they were allowed whenever desired by them, if possible, but caution was always used in the first trials of them.

Alkaline solutions, especially of the carbonates of soda and potass, were often decidedly beneficial as diaphoretics. These articles first improve the secretions of the gastro-intestinal mucous membrane, and very early after diaphoresis takes place; they also exert salutary influences as exciters of secretion through the urinary organs; occasionally they irritated the bowels, and they were laid aside and very gentle purging resorted to.

Revellents and rubefacients were often required in this stage, especially in its decline, to prevent collapse upon the approach of the remissions. In some cases it became necessary to employ them throughout this stage, by reason of the inordinate coolness of the extremities, as well as of the general surface upon the approach of every returning remission. Such depressions and fluctuations of the temperature in this stage of fever, when the organs were enfeebled from irritation, and the long disturbance of their functional operations are fraught with much danger. In several instances death suddenly followed them, when the means of counteracting their evil tendencies were neglected, by the sudden occurrence of hemorrhage from the bowels, or, an overpowering collapse.

We employed some form of revulsion or rubefaction upon the approach of every remission, if there was a tendency to sudden depression, or variation of the temperature of the surface. When the departure was inconsiderable, friction, or the application of artificial heat would generally answer in arousing, and maintaining the actions. But when the depression was considerable, and disposed to become more intense, we resorted to revellents of more active powers, and generally sinapisms, or vesicatories were preferred.

In a majority of instances, sinapisms applied in succession, to the inferior and upper extremities in the direction of the trunk, merely to redden the skin, were found fully sufficient to restore, and maintain for the time being, the actions of the surface. Occasionally, more energetic and permanent means of revulsion were required to recall to the surface, and fix in it a proper degree of action, as either the common vesicating plaster, or sinapisms suffered to remain on long enough to blister. These measures, occasionally, when employed on the nights of crisis, co-operated decidedly with the natural tendencies to crisis; and very often, too, they enhanced the sudorific effects of remedies given to promote sweating. Blisters were generally employed to the inferior extremities, and when allowable to defer them, they were always ordered so as to be in full operation during the morning remission—a remission much disposed to be attended with collapse. These remedies were likewise often required as revulsives, to counteract internal inflammation, either of the abdominal, thoracic or encephalic contents, and with great benefit. They were generally most beneficial when employed to a comparatively cool and bloodless skin, and after the pulse had been decidedly enfeebled. They were always employed to an extensive surface, when used to counteract internal inflammation. We often blistered the abdominal walls, thorax, and head, in this stage with decided benefit.

The treatment which has been premised, was our plan in the early periods of this stage; and we now propose to consider it as required in the remote periods, or, as it might very properly be termed, the Adynamic state.

It was in this stage of the febrile course that most of the lesions of structure occurred, and it appeared in many instances that the change of character or the accession of the symptoms indicative of adynamia resulted from those lesions of structure. Notwithstanding such was the predominant character, we often employed blood-letting in this stage during the exacerbations of fever. Whenever the pulse became decidedly strong, resisting and much accelerated, we bled, taking the pulse as our guide as to quantity. Generally very moderate bleedings answered, say from two to four ounces. Frequently the cautious employment of refrigerants, as already intimated, would reduce the force of the pulse, as well as the morbid heat of the skin, and render the lancet unnecessary. When we bled to any extent in this state, a commanding dose of aqua ammoniæ properly diluted was always directed at the close of the operation. This remedy by its prompt and transitory action prevented collapse from the loss of blood, without irritating the febrile operations. Great care to guard against inequality of excitement was required in this state. It was of the first importance to maintain the temperature of the surface, and the capillaries of the skin well filled, in guarding against those sudden introversions upon the internal organs. Throughout this state we found it necessary, in a majority of our cases, to employ counter-irritants at the close of every paroxysm to prevent collapse, and to protect the enfeebled internal organs; and we sometimes used sinapisms, and occasionally vesicatories as the one or the other seemed required. Blisters were generally demanded in the more intense forms of this state, either to the extremities or trunk. The nape of the neck we often blistered, especially when delirium attended, and sometimes the head also. The vitiated condition of the secretions invariably in this state required unremitting attention to them, and to ameliorate them, we occasionally used combinations of calomel or blue powder, or blue mass, with minute portions of aloes and ipecacuanha administered at night; and if these failed to act upon the bowels by morning we either directed a moderate dose of oil or an enema at that time. It was very important not to employ the mercurial compound oftener than was absolutely required to stimulate the secretions. When internal aperients were not proper, and the bowels still tardy, we invariably relied on enemata; and gruel, mucilaginous fluids, milk and water, and occasionally soup rendered active by the addition of common salt, or molasses, or oil, were the preparations used as such. Diaphoretics were required throughout this stage every critical night. We frequently at this period united two or three grains of carb. potass. or soda to the ipecac. pill; and rarely administered more than two doses during the night, and more frequently only one. The dulcified spirit of nitre was also often used as a diaphoretic, and with great benefit. When patients could not sleep, and especially if the bowels were loose or inclined to be so, small doses of Dover's powder, with a few grains of blue powder as a diaphoretic anodyne, were beneficial. In certain cases when the circulation was not sufficiently steady and energetic to favour diaphoresis, the addition of one or two grains of gum camphor to the ipecac. pill greatly enhances its sudorific effects; this form was particularly adapted to the periods of this state distinguished by increasing depression.

Another modification of the ipecacuanha pill employed by us, was the combination of two or three grains of the inspissated bile* of the swine, with one grain of ipecac. and two of the carbonate of potass: this compound was most valuable in this stage; and it seemed to act with decided effect, as a supporting and secerning remedy, upon the mucous membrane of the stomach and intestines, and as a diaphoretic at the same time. It was especially

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[*] This article we have used since 1828, and we think its employment as a therapeutic agent is original with us. We were induced to resort to it first in the low depressing states of continued fever, with the design of acting especially on the gastro-intestinal mucous membrane, which we believed became disorganized in such cases in a great measure from the want of the biliary influences; and in these cases it always acted with decided benefit: it served to substitute the action of the bile. Simply heating the bile over a sand-bath until it becomes dry and pulverizable was our mode of preparing it. It is a valuable agent in dyspepsia, and in many chronic affections attended with defective biliary secretion. In chlorosis, amenorrhœa, some forms of dysmenorrhœa, and constipation, we have also often employed it with decided advantage.

valuable in those cases attended with a denuded and raw tongue; this organ always becoming more healthy after its administration.

The highly vitiated condition of the gastro-enteritic contents during this state, in many instances required remedies especially directed to them. The fetor occasionally was intense, and seemed to exert a modifying and depressing influence with the vital movements. To correct the fetor we administered prepared carbon, in teaspoonful doses, mixed in water, once in two hours. During the remissions, the pulse frequently required the support of stimulants to prevent collapse, or dangerous depression; and the necessity for such remedies generally increased with the duration of the disease. For the purposes of stimulation, mint julap or brandy toddy were generally used, and merely to maintain the action of the pulse steadily and equally during those periods.

In most instances rubefacients, or even blisters were demanded in connection with internal stimulants, to prevent depression during the remissions, especially in the advanced stages; and occasionally it was necessary, too, to associate ammonia with the spirituous stimulants, to quicken their action, when sudden depression threatened. The ammoniated and camphorated mixtures and julaps were often employed in this state with or without the alcoholic stimulants, but were more especially adapted to and required in the advanced periods, when the disease assumed more decided characters of depression. At this particular stage, we found the internal use of the spirit of turpentine most valuable. Its peculiar tendency to arouse and maintain the actions, and to superinduce secretion without the least danger of producing over-action, eminently fitted it as a remedy at this period. The turpentine rarely, if ever, induces excessive action, either in the general circulation, or in parts to which it is directly applied, by reason we suppose of its strong secerning tendencies; and hence, perhaps, results its remarkable efficacy in burns, and non-secreting ulcers as a suppurant: we often employed it as a diuretic of great certainty, combined with dulcified spirit of nitre. To blisters, which were generally so important at this period, when disposed to dry up, we often applied the turpentine with the happiest effects. This agent never failed to re-excite the blistered surfaces into a suppurating condition, and with comparatively little pain. With the same intention, and also with a view of communicating a decided shock to the general system at the same time, we occasionally applied the aq. ammon. to blisters about to dry up, and with distinguished benefit. The ammonia is a painful application, though transitory in its action as such, and should never be resorted to unless under peculiar circumstances. We are confident that several cases were rendered convalescent by its use to blisters, which suddenly dried up, and which without it would have been lost. While on the subject of blisters we will remark, as already intimated, that these remedies were indispensable in the low states of this period of the disease; and it was important to continue their irritation after it was once excited. In several instances fatal results followed the sudden drying up of blisters. Occasionally we employed mild cataplasms, if the blistered surfaces inflamed excessively, as was sometimes the case. The oiled silk we now employ in all cases after the second or third dressing. When strangury followed blistering, the free use of demulcent drinks was always directed, and occasionally bland enemata, and gentle rubefaction with sinapisms to the soles and tops of the feet, legs, and thighs in succession, until relief was procured.

Tonics were often used in this stage, though not until great depression came on; or it was found difficult to sustain the pulse with stimulants only. The bark in substance, in the states of infusion, tincture, and extract was often employed by us, and with advantage. The quinine, we also occasionally used, but not very beneficially: it seemed generally to irritate the stomach, and in some cases produced most obstinate singultus. Columbo we now and then employed, as well as the infusion of quassia, but not with much advantage. Huxham's tincture properly diluted, the infusion of serpentaria, and good porter seemed to succeed best as tonics. Good white wine, also, especially Madeira, was often employed as a tonic stimulant, and very beneficially. In collapse with hemorrhage from the bowels, we used the bark in substance mixed either with Huxham's tincture, or wine; and in some cases gave a heaping teaspoonful every half hour until the hemorrhage was arrested. In hemorrhage from the nose and gums, we employed the bark by enema and in large portions, in combination with capsicum or ginger, and either ten grains of tartar emetic, or thirty-five of ipecacuanha to each injection, to be repeated once in three or four hours, or oftener in urgent cases, and generally with great benefit. Blisters to the nape of the neck were also resorted to, as well as local astringents. Singultus was occasionally troublesome; but was generally allayed by the use of acid syrups, carbon, and the solution of the inspissated hog's-gall in doses of four grains, in a vehicle of sugared alkaline water; or, by the gall in combination with musk and gum camphor in common doses; and these last named remedies were repeated once in three hours until relief was obtained.

Subsultus tendinum frequently occurred at this period, with or without a tympanitic state of the abdomen, and when violent, fomentations to the tumid abdomen invariably greatly moderated it. Occasionally, too, the bile in combination with gum camphor, ipecac. and aloes, exhibited once in three hours, relieved it.

Sloughing of the soft parts about the sacrum and trochanters was sometimes troublesome. To prevent this the usual remedies were resorted to. When sloughs formed we generally cut them away as early as possible, and dressed the wounds with spirit of turpentine until suppuration was established; suppuration of these wounds generally exerted a salutary influence, and frequently seemed to induce favourable crisis by perspiration.

To induce sleep in this stage we often had recourse to anodyne enemata; and three ounces of common soup, or starch gruel, with 20, 30, or 50 drops of laudanum, constituted the injections used by us, administered at bedtime, to be repeated once in six or eight hours if necessary.

Throughout this stage tonics and stimulants were most beneficial during the remissions, though they often became necessary at other periods likewise; and great care was required not to omit or misapply them. The objects in view in resorting to these agents, being to arouse the sinking or enfeebled energies, and to maintain them equably, little difficulty was experienced in adopting them, if the pulse was properly regarded.

In several very unpromising cases in the low states of this fever, we employed conjointly with tonics and stimulants, external heat, applied to the entire surface, save the face, and in intense degrees, with the happiest effects. In these cases the system was comparatively insusceptible to the action of tonics and stimulants until the capillaries of the skin had regained in a great degree their plenitude. The heat was applied nearly in a dry state, and was continued the first trials until the skin became soft and supple. After a few hours it was repeated and urged to a very moderate sweating degree. The operations were then renewed from time to time as the condition of the skin indicated, until crisis took place, which generally occurred in one or two days. For the purpose of applying heat in these cases, we employed the admirable contrivance of Prof. Jennings, of Baltimore,—a contrivance which has never been properly appreciated by the profession, and which is worthy of all praise.

The maintenance of a warm bloodful state of the skin in this stage, was not much more important as a means of cure, than a tranquil equable condition of the mental exercises. Several fatal cases occurred evidently as the consequence of improper mental exertion.

Cleanliness was of much importance, not only in promoting the comfort, but the recovery of patients. The mouth was always carefully washed before drinks or food were taken. The body clothing and bedding were changed daily; and bed-pans or folded sheets, to receive the evacuations, were always employed to prevent the necessity for rising from bed to evacuate the bowels, and the consequent dangerous fatigue. As far as practicable the sick chamber was kept quiet and free from company.

The diet and drinks were the same as we used in the early stage.

Convalescence was generally slow, and often required enemata, or internal aperients to correct costiveness. It was never safe to allow solid food during convalescence until patients were able to sit up. Many relapses followed from the too early use of animal food. Liquid or semifluid substances answered best as nourishment; and these were only allowed at stated regular periods, and in moderate quantities. Premature exposure to the sun's rays, or to inclement weather, or fatigue, were injurious. Many relapses were produced by an imprudent walk, or ride, and some of them proved fatal.

The treatment which has been presented is identical with that adopted in typhus, with the exception of bleeding in the subacute stage. We never dared to use the lancet in the subacute stage of typhus.

The critical days were generally the periods of crisis in this fever, and the 14th and 21st both days included, were the days on which most of our cases terminated. One case continued six months and resulted fortunately, though many of the inguinal and axillary glands sloughed away. Many recoveries followed hemorrhage from the bowels, bladder, nose and gums; but, generally, such conditions were unfavourable. Recoveries also took place in several cases, in which singultus, and involuntary discharges from the bowels occurred, and even in many instances after patients had been speechless, and powerless for an entire week. Only three cases terminated in suppuration of the parotids, and one of them recovered. One case resulted in necrosis of the superior maxillary bone, and after losing one-fourth of the bone complete recovery followed: in this case no mercury was used. Rheumatism followed in numerous cases. In one case disorganizing ophthalmia followed, completely destroying the eye.

PRINCE EDWARD C. H., Va., March 30, 1843.

ART. IV.—*Fungus Hæmatodes of the Knee—Amputation—Cure.*

By HENRY S. LEVERT, M. D., of Mobile, Ala.

MRS. STRAIN, aged 28 years, of sanguine nervous temperament, and the mother of seven children, was attacked with ordinary cold, accompanied with slight fever, &c. in the month of October, 1841, which confined her to bed about one week.

When she was recovering from this attack, she felt, for the first time, a slight uneasiness in the left knee, about the insertion of the ligamentum patellæ, which she supposed was produced by some slight injury of the part, although she was not aware of ever having hurt it. It was particularly painful when ascending or descending the stairs, or in kneeling, which she was often compelled to do in washing her house.

About six weeks from the first sensation of pain, she perceived a swelling on the inner side of the ligamentum patellæ, in circumference about the size of an egg, slightly elevated and very hard to the touch.

It remained in this condition, giving her more or less uneasiness, until about the 1st of February, 1842, when it commenced growing rapidly, as she supposed in consequence of the irritation of several blisters which had been applied in succession, followed by the tart. emet. oint.

The remedies were prescribed by a physician, under the impression that the patient suffered from rheumatism.